Chapter 29
Iris-Enclavated Intraocular Lens Implantation

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Abstract In cases requiring primary or secondary IOL implantation in eyes lacking capsular support, ACIOL, scleral-fixated PCIOL, or iris-sutured PCIOL are all viable options. A scleral-fixated PCIOL and iris-sutured PCIOL have the advantage of keeping the IOL away from the corneal endothelium and avoiding a 6 mm wound, though require longer operating time, significant technical expertise, and can tilt causing iris chaffing, inflammation, hyphema, and elevated intraocular pressure. There are also instances where the sutures break requiring reoperation. An iris enclavated ACIOL is similar to a traditional ACIOL, though does not require sizing, and does not have angle supported haptics that can cause damage to the corneal endothelium, inflammation, or posterior syneciae formation. The newer iris-enclavated IOLs are fixated to the mid-peripheral iris and centered over the pupil. In this position, mydriasis, iris vasculature, and the angle are not affected.

Keywords Iris-enclavated IOL • Iris-fixed IOL • Aphakia • Secondary IOL implantation • Peripheral iridectomy

Indications

Phakic correction in moderate to high myopia or secondary implantation for aphakia.

Essential Steps

1. Topical anesthetic
2. Placement of speculum
3. Paracentesis incisions
4. Miochol-E instillation
5. Viscoelastic injection into the AC
6. Partial thickness limbal groove
7. Clear corneal incision

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8. Insertion of the Artisan lens
9. Closure of the clear cornea incision
10. "Enclavation" of the iris with the lens haptics
11. Creation of a peripheral iridectomy
12. Removal of viscoelastic
13. Stromal hydration

Complications

- Traumatic injury to the iris
- Lens dislocation
- Hyphema
- Endothelial damage
- Corneal edema
- Elevated IOP
- Pupillary block
- Uveitis
- Endophthalmitis
- Cystoid macular edema (CME)
- Dysphotopsias
- Suprachoroidal hemorrhage
- Retinal detachment

Template Operative Dictation

Preoperative diagnosis: *Aphakia/phakic correction in moderate or high myopia (OS/OD)*

Procedure: Iris-enclavated intraocular lens implantation (*OD/OS*)

Postoperative diagnosis: *Same*

Indication: This is a____-year-old aphakic *male/female* some may have not had cataract surgery so perhaps make this optional ____ (*weeks/months/years*) previously or has a dislocated IOL...or has developed uveitis-glaucoma-hyphema syndrome. Patient cannot tolerate contact lenses, and after a thorough discussion of options, risks, and benefits, the patient was elected to undergo the procedure.

Description of the procedure: The patient was identified in the holding area, and the *(right/left)* eye was marked with a marking pen. The patient was brought into the OR on an eye stretcher in the supine position. 0.5 % tetracaine was instilled into the conjunctival fornices of the *(right/left)* eye. The *(right/left)* eye was prepped and draped in the usual sterile fashion and operating microscope centered over the *(right/left)* eye. The eyelid speculum was placed. A proper time-out was performed verifying correct patient, procedure, site, positioning, and special equipment prior to starting the case.

A diamond paracentesis blade was used to make two side port incisions, one superiorly and one inferiorly. Miochol-E was injected into the anterior chamber to successfully achieve intraoperative miosis. The anterior chamber was then inflated with Viscoat and Provisc. The guarded diamond blade was then used to create a *6* mm by *300* μm depth temporal groove at the limbus. A temporal clear corneal incision was made with a 2.2 mm diamond keratome, which was then extended laterally to the full extent of the groove. The Artisan lens was then placed into the anterior chamber using the curved tying forceps and a Sinskey hook used to center over the pupil. A *10-0 nylon suture* using the *triple cross-stitch method* was then placed into the main corneal incision to create a watertight wound. Iris micrograsp-ers were then used to enclave the iris into each of the claw haptics while using micro tying forceps to secure the optic of the Artisan lens. The vitreous cutter was advanced into the side port incision and used to create a peripheral iridectomy.

If anterior vitrectomy was performed: *The vitreous cutter was placed into the (superior/inferior) paracentesis incision while the irrigation cannula was placed into the (inferior/superior) incision. An anterior vitrectomy was performed until all vitreous was cleared from the anterior chamber and wounds.*

Viscoelastic was removed from the eye using coaxial irrigation and aspiration or using a BSS syringe on a 27 gauge cannula. Stromal hydration of the paracentesis incisions was performed, the triple cross-stitch was locked and the knot was buried. and the incisions were noted to be watertight (*and if necessary, 10-0 nylon simple interrupted sutures were placed*). The Artisan lens was found to be centered in posi-tion. The pupil was round and the anterior chamber was formed. Eyelid speculum and drape were removed. Maxitrol eye ointment was placed in the inferior fornix and a shield was placed over the eye. The patient was transferred to the post anes-thesia care unit in stable condition.